**K-5 Math Lesson Plan**

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| **Teacher:** *Koontz* | | | **Grade:** *4* | | | **Date(s)**: *3* |
| **Unit Title:** *Pictorial Representation* | | | | **Corresponding Unit Task:**  ***4.NBT.1: Recognize*** *that in a multi-digit whole number, a digit in one place represents ten times what it represents in the place to its right. For example, recognize that 700 ÷ 70 = 10 by applying concepts of place value and division.* | | |
| **Essential Question(s):** *How can I represent a multi-digit number using different forms (pictures)?* | | | | | | |
| **Materials/Resources** | | | | **Essential Vocabulary** | | |
| **Teacher:**  *Number Tiles* | | **Student:**  *Number Tiles*  *Show, Write, Draw Activity* | | | *Place value Digit Numeral Comma**Period Unit* | |
| **Learning Experience** | | | | | | |
| **8 Mathematical Practices:**  1. Make sense of problems and persevere in solving them.  2. Reason abstractly and quantitatively.  3. Construct viable arguments and critique the reasoning of others.  4. Model with mathematics.  5. Use appropriate tools strategically.  6. Attend to precision.  7. Look for and make use of structure.  8. Look for and express regularity in repeated reasoning. | **Common Core State Standards:**  [***4.NBT.2:***](http://collab.gcsnc.net/sites/spac007/Shared%20Documents/Units%20(Elementary%20Math)/4th%20Grade/4th%20Grade%20Math%20Unit%201/4.NBT.2P.doc)*Read and write multi-digit whole numbers using base-ten numerals, number names, and expanded form. Compare two multi-digit numbers based on meanings of the digits in each place, using >, =, and < symbols to record the results of comparisons.* | | | | | |
| **I Can Statement(s):**  ***(Read)*** *I can read multi-digit whole numbers using base-ten numerals.*  ***(Write)*** *I can write multi-digit whole numbers using number names.*  ***(Apply)*** *I can use base-ten numerals to form multi-digit whole numbers.* | | | | | |
| **Activating Strategy/Hook:** (How will students become cognitively engaged and focused?)  *Imagine that you have a chance to win $4,287 to spend on toys but in order to win the money you have to draw base ten blocks to show that amount. The judges of the competition will pick the best representation and the winner will walk away with a check for $4,287. What is the best way that you can show that amount using base ten blocks?* | | | | | |
| **Teacher Directed:** *Teacher will explain that a sometimes picture helps us understand things a little easier. Pictures help paint a visual image in your mind. Today we will be representing numbers using pictures. Teacher will review the base ten blocks with students.*    *Thousand Hundred Ten One*  *Teacher will explain to students that: 10 units equals one rod (10), 10 rods equals 1 flat or 100 units (100), 10 flats equals 1 cube or 1000 units (1,000), 10 cubes equals 10,000. Teacher will draw a place value chart on the board displaying one through million and explain that beginning with the ones place at the right, each place value is multiplied by increasing powers of 10. For example, the value of the first place on the right is "one", the value of the place to the left of it is "ten," which is 10 times 1. The place to the left of the tens place is hundreds, which is 10 times 10, and so forth.*   |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | | *Millions,* | *Hundred. Thousand* | *Ten Thousand* | *Thousand,* | *Hundred* | *Tens* | *Ones* | | ***Multiply (x 10)*** |  |  |  |  |  | *1* | |  |  |  |  |  | *10* |  | |  |  |  |  | *100* |  |  | |  |  |  | *1,000* |  |  |  | |  |  | *10,000* |  |  |  |  | | ***Divide (÷ 10)*** | *100,000* |  |  |  |  |  | | *1,000,000* |  |  |  |  |  |  | |  |  |  |  |  |  |  |   *Teacher will model how to represent numbers using base ten blocks using the following numbers: 273, 1,837, 12,073, 49, 812 and how to solve word problems using pictures. Explain that there are more than one way to show a number.* | | | | | |
| **Guided Practice:** *Teacher will randomly select number tiles to create a number. Teacher will write the number on the board and call on students to choose which base ten blocks to use to represent the number.*   |  |  |  | | --- | --- | --- | | ***Number*** | ***Picture*** | ***Show your work*** | | ***623*** |  | ***600***  ***20***  ***+ 3***  ***623*** | | ***or*** |  | ***500***  ***110***  ***+ 13***  ***623*** |   *Teacher will then place word problems on the overhead and have students to write down the problems and guide teacher in solving them.* | | | | | |
| **Independent Practice:** *Students will**complete a Show, Write, Draw Activity. Students will show 2 different ways to represent the number using base ten blocks.*  *Directions:*  *1. Pick a number. Using base ten blocks, show that number of thousands on your place value mat.*  *2. Pick a number. Using base ten blocks, show that number of hundreds on your place value mat.*  *3. Pick a number. Using base ten blocks, show that number of tens on your place value mat.*  *4. Pick a number. Using base ten blocks, show that number of ones on your place value mat.*  *5. Write the number below.*  *6. Draw a model that matches your number.*  *On the back students will complete word problems using base ten blocks.* | | | | | |
| **Closing/Summarizing Strategy:** *Students will complete a Power of Ten Exit Card* | | | | | |
| **Differentiation Strategies** | | | | | | |
| **Extension** | | | **Intervention** | | | **Language Development** |
|  | | |  | | |  |
| **Assessment(s):** *Students will have to use base ten block pictures to represent the given number.* | | | | | | |
| **Teacher Reflection:** (Next steps?) | | | | | | |

**Name \_\_\_\_\_\_\_\_\_\_**

**Exit Card**

1.How do the *places* in place value relate to the power of ten?

2. Fill in the blank.

     \_\_\_\_    x   10  = 40,000

\_\_\_\_    x   10  = 100,000

\_\_\_\_    x   10  = 700

\_\_\_\_    x   10  = 30,000,000

\_\_\_\_    x   10  = 9,000

3. Write in standard form.

     10 to the power of 3  \_\_\_\_\_\_\_\_\_\_\_

     10 to the power of 5 \_\_\_\_\_\_\_\_\_\_\_

     10 to the power of 7 \_\_\_\_\_\_\_\_\_\_\_